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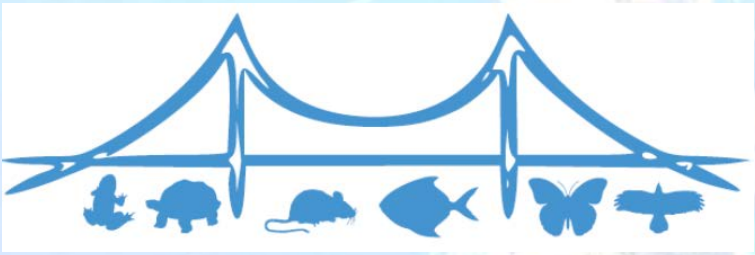

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EFFECTS OF REPEATED ACUTE STRESS IN SENEGALESE SOLE *Solea senegalensis*. CAN THIS SPECIES HABITUATE TO REITERATED HANDLING STRESS?

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Animals can sometimes habituate to a reiterative stressor by reducing the physiological response that such stressor evoked initially. Studies related to stress habituation in fish are scarce and the available data differ depending on the species, type, duration and severity of the stressor. The aim of this study was to investigate the stress response of juvenile Senegalese sole (88.3±1.5 g) submitted to repeated handling stress the 3 days previous to the experiment in order to evaluate the occurrence of habituation to those stress conditions in this species. Thus, five different experimental groups (N=11) were evaluated in duplicate: not stressed fish (control), fish stressed only on the experimental day (ST/naïve), and fish stressed on the experimental day and on the 3 previous days during the morning (ST/Dt), at night (ST/Nt) or both (ST/Dt+Nt). Parameters related to the physiological stress response were evaluated in plasma and brain. Handling stress in ST/naïve group induced incremented values of plasmatic cortisol, glucose and lactate but no changes in cathecolamines levels compared to controls. In trained fish, higher cortisol but decreased glucose, lactate and cathecolamines levels were observed after stress compared to controls and to ST/naïve groups. In brain, ST/naïve group presented no significant changes in serotonergic activity. However, incremented serotonergic activity was detected in fish previously trained. Furthermore, CRH expression in hypothalamus was higher in ST/naïve fish but not in fish submitted to repeated stress compared to controls. In conclusion, it seems that there is not a habituation to repeated acute stress in *Solea senegalensis* in terms of serotonergic activity and cortisol release during the physiological stress response. However, the decrease of plasmatic cathecolamines and the hypothalamic CRH expression indicate a possible modulation of the stress response in trained fish.